Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A single sensor color image pickup device for picking up a color image, comprising:

a pixel group placed in an array of a plurality of pixels of photoelectric conversion elements; and

a color coding array corresponding to the pixel group, arranged in a randomized array satisfying predetermined minimum color density conditions;

wherein the color coding array arranged in the randomized array directly picks up the color image.

Claim 2 (Currently Amended): The single sensor color image pickup device according to claim 1, wherein said color coding array comprises a color filter.

Claim 3 (Currently Amended): A single sensor color image pickup apparatus for picking up a color image, comprising:

a color image pickup device having a pixel group placed in an array of a plurality of pixels of photoelectric conversion elements and a color coding array corresponding to the pixel group, arranged in a randomized array satisfying predetermined minimum color density conditions;

the color coding array arranged in the randomized array directly picks up the color image; and

color separation means for performing color separation processing of output signals of the color image pickup device in accordance with the random color coding array of the color image pickup device.

Claim 4 (Currently Amended): The single sensor color image pickup apparatus according to claim 3, wherein said color coding array comprises a color filter.

Claim 5 (Currently Amended): The single sensor color image pickup apparatus according to claim 3 further comprising storage means for storing array data concerning the random color coding array of said color image pickup device, for performing color separation processing at said color separation means.

Claim 6 (Currently Amended): The single sensor color image pickup apparatus according to claim 5, wherein said storage means comprises mask ROM.

Claim 7 (Currently Amended): The single sensor color image pickup apparatus according to claim 5, wherein said storage means comprises EEPROM.

Claims 8 – 20 (Canceled).

Claim 21 (Currently Amended): A single sensor color image pickup device for picking up a color image, comprising:

a pixel group placed in an array of a plurality of pixels of photoelectric conversion elements; and

a color coding array corresponding to the pixel group, arrayed in a randomized array satisfying predetermined color distributing conditions and satisfying predetermined minimum color density conditions;

wherein the color coding array arranged in the randomized array directly picks up the color image.

Claim 22 (Currently Amended): The single sensor color image pickup device according to claim 21, wherein said color coding array comprises a color filter.

Claim 23 (Currently Amended): A single sensor color image pickup apparatus comprising:

a color image pickup device having a pixel group placed in an array of a plurality of pixels of photoelectric conversion elements and a color coding array corresponding to the pixel group, arrayed in a randomized array satisfying predetermined color distributing conditions and satisfying predetermined minimum color density conditions;

the color coding array arranged in the randomized array directly picks up the color image; and

color separation means for performing color separation processing of output signals of the color image pickup device in accordance with the random color coding array of the color image pickup device.

Claim 24 (Currently Amended): The single sensor color image pickup apparatus according to claim 23, wherein said color coding array comprises a color filter.

Claim 25 (Currently Amended): The single sensor color image pickup apparatus according to claim 23 further comprising storage means for storing array data concerning the random color coding array of said color image pickup device, for performing color separation processing at said color separation means.

Claim 26 (Currently Amended): The single sensor color image pickup apparatus according to claim 25, wherein said storage means comprises mask ROM.

Claim 27 (Currently Amended): The single sensor color image pickup apparatus according to claim 25, wherein said storage means comprises EEPROM.

Claim 28 (Currently Amended): A single sensor color image pickup apparatus for picking up a color image, comprising:

a color image pickup device having a pixel group placed in an array of a plurality of pixels of photoelectric conversion elements and a color coding array corresponding to the pixel group, arranged in a randomized array and satisfying predetermined minimum color density conditions;

the color coding array arranged in the randomized array directly picks up the color image;

storage means for storing array data concerning the color coding array and pixel defect data of the color image pickup device; and

color separation means for generating color signals in accordance with the color coding array data stored in the storage means,

wherein said color separation means performing a predetermined pixel defect correction in the color signal generating process based on the pixel defect data stored in said storage means.

Claim 29 (Currently Amended): The single sensor color image pickup apparatus according to claim 28, wherein said color coding array comprises a color filter.

Claim 30 (Currently Amended): The single sensor color image pickup apparatus according to claim 28, wherein the predetermined pixel defect correction processing by said color separation means comprises processing where an output signal of a fault pixel is supplemented by using an output signal of the pixel nearest to the fault pixel among the pixels of the same color as the color of signal to be supplemented for the fault pixel.

Claim 31 (Currently Amended): The single sensor color image pickup apparatus according to claim 28, wherein said storage means comprises EEPROM.

Claim 32 (Currently Amendeds): The single sensor color image pickup apparatus according to claim 30, wherein said storage means comprises EEPROM.

Claim 33 (Currently Amended): A single sensor color image pickup device comprising:

a pixel array having two-dimensionally arranged pixels, for effecting photoelectric conversion of an incident optical image; and

a color separation filter for guiding the incident optical image to each pixel of said pixel array in a manner separated into a plurality of primary colors;

wherein said color separation filter has a random color arrangement satisfying minimum color density conditions ~~concerning colors~~ but having no regularity and directly picks up the color image.

Claim 34 (Currently Amended): A single sensor color image pickup system comprising:

a color image pickup device comprising a pixel array having two-dimensionally arranged pixels for effecting photoelectric conversion of an incident optical image and a color separation filter for guiding the incident optical image to each pixel of said pixel array in a manner separated into a plurality of primary colors, said color separation filter having a random color arrangement satisfying minimum color density conditions ~~concerning colors~~ but without regularity and directly picking up the color image;

a preprocess circuit for at least converting output of said color image pickup device into digital signals;

a memory device for storing color restoration data corresponding to the color arrangement of said color separation filter; and

a digital processing circuit for generating digital image signals restored to predetermined color space, based on the digital signals outputted from said preprocess circuit and the color restoration data stored at said memory device.